Chapter 3:

The Child Nutrition Database and USDA-Approved Nutrient Analysis Software for School Nutrition Programs

Why the Child Nutrition Database Was Created

The Food and Nutrition Service (FNS) of the U.S. Department of Agriculture (USDA) recognizes that the success of nutrient-based menu planning and the State monitoring of compliance with the nutrition goals for food-based menus is dependent on an accurate nutrient analysis of the recipes and the breakfast and lunch meals served in schools.

Prior to creating the Child Nutrition (CN) Database, USDA staff evaluated more than 15 nutrient analysis software packages. They determined that there was an absence of accurate, complete and verified databases. In general:

- Databases did not contain the types of foods, descriptions, weights and measurements commonly used in child nutrition programs. Specifically, food descriptions were inconsistent and not standardized.
- Many databases contained incomplete and missing nutritional values, which could lead to inaccuracy in nutrient calculations and a misinterpretation of the nutritional analysis.
- The databases contained a limited number of brand name food products for institutional use.
- There was no evidence of quality control in many databases and in others the tolerance level for inaccuracy was very high.

Recognizing the need for accurate, reliable, complete, and centralized nutrient data, FNS in cooperation with the

Agricultural Research Service (ARS) developed the CN Database for use in nutrient analysis of school meals.

Component Files of the CN Database

The CN Database contains five component files: a standard reference file, a file of USDA commodities, a file of the USDA quantity recipes for schools, a brand name processed foods file, and a file containing the USDA *Food Buying Guide*. These files are locked, which means that the information in those files may be accessed and copied, but may not be altered by the local user. Food identification codes or numbers are reserved for use in the CN Database.

In addition, the software provides users the ability to compile a local database for food items that do not appear in the CN Database. An SFA will need to enter into their local database any foods not listed in the CN Database that are offered on school menus.

Child Nutrition Database Contents

1. Standard Reference Foods

This locked file contains over 1800 of the foods most commonly used in school meals from USDA's Nutrient Data Base for Standard Reference. The nutrient data for the standard reference food products are developed by the Agricultural Research Service.

Food categories in the Standard Reference file include:

Baked Goods	Fats and Oils	Nuts and Seeds
Beef	Fish	Poultry
Beverages	Fruits/Juices	Pork
Cereals	Grains	Snacks and Sweets
Condiments	Lamb	Soups, Sauces, Gravies
Dairy Products and Eggs	Luncheon Meats and Sausage	Spices
		Vegetables

2. USDA Commodities

This locked file contains the current USDA commodity foods available to schools.

3. USDA Quantity Recipes for School Food Service

This locked file contains all current USDA quantity recipes for school food service, including new recipes developed for the school nutrition program in *A Tool Kit for Healthy School Meals*.

Only the nutrient information is included in the CN Database, not the recipe ingredients and directions, because the nutrient analysis data were obtained using a more complex recipe analysis method which gives more precise nutrient data. If a school uses the USDA recipe exactly as displayed on the recipe card (first listed ingredient when alternates are listed and no optional ingredients), the CN Database item should be selected.

How nutrient analyses of USDA recipes were calculated:

a) **Based on first ingredient only**: When USDA recipes show alternate ingredient choices, the nutrient analysis is based on the first ingredient listed, not the alternate ingredient.

Example:

Recipe D-13 Beef or Pork Taco

Raw ground beef or raw ground pork is listed. The recipe analysis is based on the first ingredient listed, raw ground beef. Therefore, if the school district uses raw ground pork to prepare this recipe, the correct recipe must be entered into the local database and the nutrient analysis recalculated.

b) **Optional ingredients are not included**: The nutrient analysis does not include any ingredients listed as optional.

Example:

Recipe D-20 Chili Con Carne with Beans

Cheddar cheese is an optional ingredient in this recipe and was not included in the nutrient analysis. If cheddar

cheese is included as an ingredient in the recipe, the recipe including cheddar cheese must be entered into the local database and the nutrient analysis recalculated.

c) **Variations of USDA recipes**: Some, but not all, recipe variations are included in the database.

Example:

Recipe B-4 Baking Powder Biscuits

Lists four variations:

1. B-4a Baking Powder Biscuit using Master Mix
2. B-4b Cheese Biscuits
3. B-4c Drop Biscuits
4. B-4d Wheat Biscuits

Each of these recipe variations *is* included in the database, but many other variations are not. If the school district is using a variation of a recipe that is not in the database, the recipe variation must be entered into the local database and the nutrient analysis recalculated.

Because so many schools use alternate or optional ingredients or variations of USDA recipes, some software companies have entered the USDA recipes into their local database so that schools will be able to easily modify the recipe, rather than having to enter the entire recipe with the alternate ingredient or variation into the local database.

4. Brand Name Processed Foods

FNS recently contracted with Sales Partner Systems, Inc. (SPS) to manage the CN Database. SPS is a working partner with the International Food Distributor's Association (IFDA) and currently manages a database of more than 35,000 food service product descriptions for over 260 manufacturers.

Since numerous processed products are used by schools, manufacturers are encouraged to submit nutritional information for their products to SPS so they can be added to the CN Database. This saves data entry time for local schools and makes nutritional information on those products available nationwide. A sample of the form to be completed by manufacturers for submission of data to SPS is in Appendix B on pp. 37-39.

It should be noted that SPS has a fee schedule for this service. For information on the fee schedule and details on how to submit data, manufacturers may contact SPS at the following address and telephone number:

Sales Partner Systems, Inc.
770 West Granada Boulevard, Suite 116
Ormond Beach, FL 32174
Telephone: 1-(800) 777-2924
Extension: 152 (Patty Kraft)

5. USDA *Food Buying Guide*

This locked file contains the information needed to purchase the correct food quantities and to determine raw to cooked yields for recipe analysis.

The Local Database

The USDA-approved nutrient analysis software provides the ability to compile a local database for food items. Foods not listed in the CN Database must be entered into the local database if they are offered on school menus. These foods will need to be entered by local school food service personnel or by State reviewers.

As discussed previously, some software companies have entered the USDA recipes with their ingredients into their local database. While this promotes easy recipe modification, it is important to note that these recipes are not part of the CN Database and have not been reviewed by USDA for accuracy. In addition, some software companies have developed a local database which contains nutrient analysis data on purchased products. SFAs/State agencies are cautioned that these local databases may not have the same quality control monitoring as the CN Database, and may contain errors and/or missing data.

Regardless of the menu planning system used, SFAs are responsible for obtaining correct and complete nutrient analysis data on products which are used by the SFA but which are not in the CN Database in order that an accurate nutrient analysis of school meals will be obtained.

Local Products and Ingredients

Only locally-entered products and ingredients may be modified or deleted from the database. The procedure for

adding a food to the local database will vary in order and method, depending on the nutrient analysis software program.

It is important that schools follow their software program's instructions on developing a local database.

CN Database Updates

The CN Database will be updated periodically to include new products. Food ingredients and nutrient data entered into the local database should not be lost or deleted when your software is updated with a new version of the CN Database. As a precautionary measure, SFAs/State agencies should make backup files to a disk before updating. When an update of the CN Database includes a food item that a school district has previously entered locally, that food item should be deleted from the district's local database.

Nutrient Analysis Software for School Nutrition Programs

The CN Database is a required component of nutrient analysis software developed by software companies specifically for use in the analysis of school meals.

The software selected for NSMP and ANSMP must be approved by USDA. State agencies will also use USDA-approved software during state monitoring of food-based menu planning systems. All USDA-approved nutrient analysis software will perform the following functions:

- The user will be able to enter new food items from nutrient analysis information provided in a manufacturer's nutrient analysis data sheet or Nutrition Facts label.
- The user will be able to enter and modify recipes and obtain nutrient analyses of the recipes.
- The user will be able to plan, modify and copy menus and to obtain a nutrient analysis for each menu or for a week of menus (3-7 days).
- The user will be able to create new nutrient standards for a specific age category.
- The software will compare a menu to a specific nutrient standard and indicate when standards are not being met.

- The software will print reports, such as nutrient composition, menus, production records, etc.

A more detailed description of the software requirements and functions is provided in Appendix A on page 35.

State agencies will have a list of current USDA-approved nutrient analysis software packages. This information is also available on the Internet through the **Healthy School Meals Resource System** at the following Internet address: **http://schoolmeals.nal.usda.gov:8001**.

Description of Software Requirements and Functions

Nutrient Standard Menu Planning software which meets the specifications for use in the Child Nutrition Program must comply with the following criteria:

All of the appropriate files and fields from the Child Nutrition (CN) Database must be incorporated into the software (standard reference foods, USDA standardized recipe food items, commodity foods, manufacturer's foods, weights and measures, and the USDA *Food Buying Guide*). Information provided by the CN Database cannot be altered by users; however, user-entered information can be edited or deleted.

The user will be able to enter new food items into a local database from information provided in a manufacturer's fact sheet or food label in nutrients per serving or specific weight, or percent of the Daily Reference Value (DRV). The software will automatically convert measures for weight and volume (if available) at all levels of item entry, recipe development, and menu planning.

The user will be able to enter recipes; the software will produce a recipe report that includes the recipe code number, recipe name, serving/portion size, yield of the recipe based on number of servings, ingredients, the amount of each ingredient in units appropriate for food service, preparation instructions, and nutrient value of the recipe per serving or per 100 g (with nutrient changes calculated due to moisture/fat factors). The Recipe Nutrient Composition Report will contain the nutrient value contributed by each ingredient and the total nutrient value of the recipe per serving or per 100 g. The yield of the recipe will be able to be accurately adjusted to meet the needs of the food service without degrading the base recipe. A Recipe/Ingredient Cross Reference report will identify recipes that contain a certain food ingredient.

Menus for a specific site can be developed and copied to another site or data range and the serving sizes adjusted for various age groups. Menu Reports will be available in both calendar and report formats. A Menu Production Record can be printed for use by food service workers to determine the quantities and serving sizes of food to prepare for a specific site.

The Standard and Modified RDA data sets provided USDA are incorporated into the software and used for comparison in nutrient analyses. A new nutrient standard (e.g., age 5-11) can be created, simply by entering the age or age range of the new grouping. A Weighted Nutrient Analysis of an individual menu or range of menu dates can be provided. A summary of the calculated nutrient value of the menu is then compared to the nutrient standards of a selected age group and deficiencies highlighted. The software will search the database for food items containing specific nutrients, so that menus can be adjusted to meet the nutrient standards.

The nutrient composition of all food items and recipes in the databases (CN Database and local database) can be printed, including all nutrients/components (calories, protein, carbohydrate, fat, saturated fat, Vitamin A, Vitamin C, iron, calcium, cholesterol, sodium, dietary fiber, and the percentage of calories from protein, carbohydrate, fat, and saturated fat).

Training Documents and the User's Manual must be presented in a complete, sequential, easy-to-understand format. The developer must have a system to update the database whenever a new release of the CN Database is available.